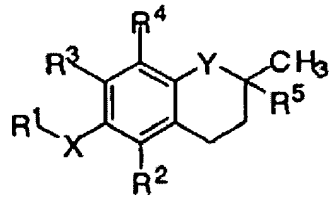
## CLAIM AMENDMENT

1. (Currently amended): A method for inhibiting the growth of tumor cells in an individual comprising administering to the individual a pharmacologically effective dose of a compound having a structural formula



Wherein X is oxygen ~~or nitrogen~~;

Y is oxygen or $NR^6$

$R^1$ is $-C_{1-10}$alkylene-COOH, $-C_{1-4}$alkylene-$CONH_2$, $-C_{1-4}$alkylene-COO-$C_{1-4}$alkyl, $-C_{1-4}$alkylene-CON($C_{1-4}$alkylene-COOH)$_2$, $-C_{1-4}$alkylene-OH, $-C_{1-4}$alkylene-$NH_3$-halo or $-C_{1-4}$alkylene-$OSO_2NH(C_{1-4}$alkyl), $-C_{1-4}$alkylene-COO-$C_{1-4}$alkyl, $-C_{1-10}$alkylene-CO-SH, $-C_{1-4}$alkylene-CO-S($C_{1-4}$alkyl), $-C_{1-4}$alkylene-CS-$NH_2$, $-C_{1-4}$alkylene-CO-$NH_{(2-n)}(C_{1-4}\text{alkyl})_n$ wherein n is 2 or 1, $-C_{1-4}$alkylene-$SO_2$-O($C_{1-4}$alkyl), $-C_{1-4}$alkylene-$OSO_2$-O($C_{1-4}$alkyl), $-C_{1-4}$alkylene-OP(O-$C_{1-4}$alkyl)$_3$, or $-C_{1-10}$alkylene-CN;

$R^2$ and $R^3$ are independently hydrogen or $R^4$;

$R^4$ is methyl;

$R^5$ is a $C_{7-16}$ olefinic group containing 3 to 5 ethylenic bonds;

$R^6$ is hydrogen or methyl.

2. (Currently amended): The method of claim 1, wherein said compound is an α-tocotrienol, a γ-tocotrienol or a δ-tocotrienol.

3. (Original): The method of claim 1, wherein said compound is 2,5,7,8-tetramethyl-2R-(4,8,12-trimethyl-3,7,11 E:Z tridecatrien) chroman-6-yloxy) acetic acid.

4. (Previously presented): The method of claim 1, wherein said compound induces apoptosis, DNA synthesis arrest, cell cycle arrest, or cellular differentiation in cells comprising said tumor.

5. (Previously presented): The method of claim 1, wherein said compound is administered in a dose of about 1 mg/kg to about 60 mg/kg.

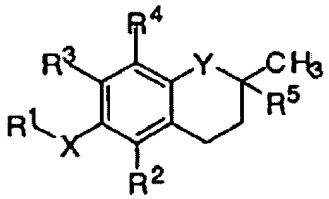
6. (Previously presented): The method of claim 5, wherein administration of said composition is oral, topical, liposomal/aerosol, intraocular, intranasal, parenteral, intravenous, intramuscular, or subcutaneous.

7. (Canceled)

8. (Currently amended): The method of claim 1, wherein said tumor cells comprise an ovarian cancer, a cervical cancer, an endometrial cancer, a bladder cancer, a lung cancer, a breast cancer, a testicular cancer, a prostate cancer, a glioma, a fibrosarcoma, a retinoblastoma, a melanoma, a soft tissue sarcoma, an osteosarcoma, a leukemia, a colon cancer, a carcinoma of the kidney, a pancreatic cancer, a basel cell carcinoma, or a squamous cell carcinoma.

9-13. (Canceled)

14. (Currently amended): A method of inducing apoptosis of a cell, comprising the step of contacting said cell with a pharmacologically effective dose of a compound having a structural formula




Wherein X is oxygen ~~or nitrogen~~;

Y is oxygen or $NR^6$

$R^1$ is $-C_{1-10}$alkylene-COOH, $-C_{1-4}$alkylene-$CONH_2$, $-C_{1-4}$alkylene-COO-$C_{1-4}$alkyl, $-C_{1-}$

$_4$alkylene-CON($C_{1-4}$alkylene-COOH)$_2$, -$C_{1-4}$alkylene-OH, -$C_{1-4}$alkylene-$NH_3$-halo or -$C_{1-4}$alkylene-$OSO_2NH(C_{1-4}$alkyl), -$C_{1-4}$alkylene-COO-$C_{1-4}$alkyl, -$C_{1-10}$alkylene-CO-SH, -$C_{1-4}$alkylene-CO-S($C_{1-4}$alkyl), -$C_{1-4}$alkylene-CS-$NH_2$, -$C_{1-4}$alkylene-CO-$NH_{(2-n)}$($C_{1-4}$alkyl)$_n$ wherein n is 2 or 1, -$C_{1-4}$alkylene-$SO_2$-O($C_{1-4}$alkyl), -$C_{1-4}$alkylene-$OSO_2$-O($C_{1-4}$alkyl), -$C_{1-4}$alkylene-OP(O-$C_{1-4}$alkyl)$_3$, or –$C_{1-10}$alkylene-CN;

$R^2$ and $R^3$ are independently hydrogen or $\underline{R}^4$;

$R^4$ is methyl;

$R^5$ is a $C_{7-16}$ olefinic group containing 3 to 5 ethylenic bonds;

$R^6$ is hydrogen or methyl.

15. (Currently amended): The method of claim 14, wherein said compound is an α-tocotrienol, a γ-tocotrienol or a δ-tocotrienol.

16. (Original): The method of claim 14, wherein said compound is 2,5,7,8-tetramethyl-2R-(4,8,12-trimethyl-3,7,11 E:Z tridecatrien) chroman-6-yloxy) acetic acid.

17. (Canceled)

18. (Previously presented): The method of claim 1, wherein $R^1$ is –$C_{1-10}$alkylene-COOH.

19. (Previously presented): The method of claim 1, wherein $R^1$ is -$C_{1-4}$alkylene-$CONH_2$.

20. (Previously presented): The method of claim 1, wherein $R^1$ is -$C_{1-4}$alkylene-COO-$C_{1-4}$alkyl.

21. (Previously presented): The method of claim 1, wherein $R^1$ is -$C_{1-4}$alkylene-CON($C_{1-4}$alkylene-COOH)$_2$.

22. (Previously presented): The method of claim 1, wherein $R^1$ is -$C_{1-4}$alkylene-OH.

23. (Previously presented): The method of claim 1, wherein $R^1$ is -$C_{1-4}$alkylene-$NH_3$-halo.

24. (Previously presented): The method of claim 1, wherein $R^1$ is -$C_{1-4}$alkylene-$OSO_2NH(C_{1-}$

$_4$alkyl).

25. (Previously presented): The method of claim 1, wherein $R^1$ is -$C_{1-4}$alkylene-COO-$C_{1-4}$alkyl.

26. (Previously presented): The method of claim 1, wherein $R^1$ is -$C_{1-10}$alkylene-CO-SH.

27. (Previously presented): The method of claim 1, wherein $R^1$ is -$C_{1-4}$alkylene-CO-S($C_{1-4}$alkyl).

28. (Previously presented): The method of claim 1, wherein $R^1$ is -$C_{1-4}$alkylene-CS-$NH_2$.

29. (Previously presented): The method of claim 1, wherein $R^1$ is -$C_{1-4}$alkylene-CO-$NH_{(2-n)}$($C_{1-4}$alkyl)$_n$ wherein n is 2 or 1.

30. (Previously presented): The method of claim 1, wherein $R^1$ is -$C_{1-4}$alkylene-$SO_2$-O($C_{1-4}$alkyl).

31. (Previously presented): The method of claim 1, wherein $R^1$ is -$C_{1-4}$alkylene-$OSO_2$-O($C_{1-4}$alkyl).

32. (Previously presented): The method of claim 1, wherein $R^1$ is -$C_{1-4}$alkylene-OP(O-$C_{1-4}$alkyl)$_3$.

33. (Previously presented): The method of claim 1, wherein $R^1$ is –$C_{1-10}$alkylene-CN.

34. (Previously presented): The method of claim 1, wherein $R^2$ is hydrogen.

35. (Previously presented): The method of claim 1, wherein $R^2$ is methyl.

36. (Previously presented): The method of claim 1, wherein $R^3$ is hydrogen.

37. (Previously presented): The method of claim 1, wherein $R^3$ is methyl.

38. (Previously presented): The method of claim 1, wherein $R^4$ is methyl.

39. (Previously presented): The method of claim 1, wherein $R^5$ is a $C_{7-16}$ olefinic group containing 3 to 5 ethylenic bonds.

40. (Previously presented): The method of claim 1, wherein $R^6$ is methyl.

41. (Previously presented): The method of claim 1, wherein $R^6$ is hydrogen.

42. (Previously presented): The method of claim 14, wherein $R^1$ is $-C_{1-10}$alkylene-COOH.

43. (Previously presented): The method of claim 14, wherein $R^1$ is $-C_{1-4}$alkylene-$CONH_2$.

44. (Previously presented): The method of claim 14, wherein $R^1$ is $-C_{1-4}$alkylene-COO-$C_{1-4}$alkyl.

45. (Previously presented): The method of claim 14, wherein $R^1$ is $-C_{1-4}$alkylene-CON($C_{1-4}$alkylene-COOH)$_2$.

46. (Previously presented): The method of claim 14, wherein $R^1$ is $-C_{1-4}$alkylene-OH.

47. (Previously presented): The method of claim 14, wherein $R^1$ is $-C_{1-4}$alkylene-$NH_3$-halo.

48. (Previously presented): The method of claim 14, wherein $R^1$ is $-C_{1-4}$alkylene-$OSO_2NH(C_{1-4}$alkyl).

49. (Previously presented): The method of claim 14, wherein $R^1$ is $-C_{1-4}$alkylene-COO-$C_{1-4}$alkyl.

50. (Previously presented): The method of claim 14, wherein $R^1$ is $-C_{1-10}$alkylene-CO-SH.

51. (Previously presented): The method of claim 14, wherein $R^1$ is $-C_{1-4}$alkylene-CO-$S(C_{1-4}$alkyl).

52. (Previously presented): The method of claim 14, wherein $R^1$ is $-C_{1-4}$alkylene-CS-$NH_2$.

53. (Previously presented): The method of claim 14, wherein $R^1$ is $-C_{1-4}$alkylene-CO-$NH_{(2-n)}(C_{1-4}$alkyl)$_n$ wherein n is 2 or 1.

54. (Previously presented): The method of claim 14, wherein $R^1$ is $-C_{1-4}$alkylene-$SO_2$-$O(C_{1-4}$alkyl).

55. (Previously presented): The method of claim 14, wherein $R^1$ is -$C_{1-4}$alkylene-$OSO_2$-O($C_{1-4}$alkyl).

56. (Previously presented): The method of claim 14, wherein $R^1$ is -$C_{1-4}$alkylene-OP(O-$C_{1-4}$alkyl)$_3$.

57. (Previously presented): The method of claim 14, wherein $R^1$ is –$C_{1-10}$alkylene-CN.

58. (Previously presented): The method of claim 14, wherein $R^2$ is hydrogen.

59. (Previously presented): The method of claim 14, wherein $R^2$ is methyl.

60. (Previously presented): The method of claim 14, wherein $R^3$ is hydrogen.

61. (Previously presented): The method of claim 14, wherein $R^3$ is methyl.

62. (Previously presented): The method of claim 14, wherein $R^4$ is methyl.

63. (Previously presented): The method of claim 14, wherein $R^5$ is a $C_{7-16}$ olefinic group containing 3 to 5 ethylenic bonds.

64. (Previously presented): The method of claim 14, wherein $R^6$ is methyl.

65. (Previously presented): The method of claim 14, wherein $R^6$ is hydrogen.